

## Database Corruption Causing CRS Failures during Severe Weather

We have had reports of CRS problems during the severe weather that occurred last weekend. In researching so far, it looks like corruption of the database is involved. I'm still looking into this to try to correlate symptoms between the sites and see if I can figure out how the corruption occurred. Based on research so far, it appears that the database corruption existed well before the severe weather, but showed no outward symptoms until the severe weather outbreak. I was able to see some early symptoms that might have warned the site of the impending problem ... and possibly avoided the system problems that occurred in the middle of a tornado outbreak.

Please do the following checks to see if your CRS system has the beginnings of this problem:

1. Check for question marks in your daily ascii backup files.

You can do this by going into a unix shell as user crs- then type: **grep ? /crs/data/SS/daily\***

This will check all of your daily backups for a question mark - if it finds any it will list them on your screen. If there are none (what we hope for) it will just return your command line prompt.

2. Check your transmitter logs for entries where the system was unable to identify the message type of the product it was broadcasting.

Go to the **Maintenance** pulldown - select **Activity Logs** - select Log Type of **Transmit** - List Range of **Date/Time**

then enter a from and through date and time that will give you the last couple of hours

Click on the **Save icon**

The log list window will refresh with the log entries for the desired period. You will see entries for each message created, deleted, broadcast, etc.

In a normal log entry for a message being broadcast, created or deleted, you should see the message type identified by its 9 digit pil like this:

```
----[ 03/13/06 03:05:02 ==- Message Broadcast - sent from CSC: PS_MS ]---- start_time:
03:03:13 end_time: 03:05:02, type: MKEZFPDLL, transmitter: MSN
```

```
----[ 03/13/06 04:21:40 ==- Message Created - sent from CSC: DB_MH ]----
activity_time: 04:21:00 expire_time: 05:00:00, Type: MKEFFAFLD, messageID: 2,
oldMessageType: ,oldMessageID: 0,
auto_manual: 0, transmitter(s): MKE
```

```
----[ 03/13/06 04:30:01 ==- Message Deleted - sent from CSC: DB_SH ]----
activity_time: 03:51:00 expire_time: 04:30:00, Type: MKETOAJVL, messageID: 5,
```

oldMessageType: ,oldMessageID: 0,  
auto\_manual: 1, transmitter(s): MKE

In a **PROBLEM entry**, the system is unable to identify the message type of the product resulting in an entry like this:

----[ 03/13/06 04:29:45 ==- Message Broadcast - sent from CSC: PS\_MS ]----  
start\_time: 04:28:21 end\_time: 04:29:45, msg\_id: 334, transmitter: SBM  
**(Note it has msg\_id:# instead of type: name)**

----[ 03/13/06 04:47:14 ==- Message Created - sent from CSC: DB\_MH ]----  
activity\_time: 04:46:00 expire\_time: 04:52:00, Type: , messageID: 21, oldMessageTypeID:  
0,oldMessageID: 0,  
auto\_manual: 0, transmitter(s): JVL  
**(Note it has a blank in the Type: instead of Type: name)**

----[ 03/13/06 05:00:00 ==- Message Deleted - sent from CSC: DB\_SH ]----  
activity\_time: 04:46:00 expire\_time: 04:52:00, Type: , messageID: 17, oldMessageTypeID:  
132,oldMessageID: 2,  
auto\_manual: 1, transmitter(s): MKE  
**(Note it has a blank in the Type: instead of Type:name)**

Any of the above entries are indicative of a corrupt database which can cause problems (including the following example) during severe weather:

----[ 03/13/06 04:21:48 ==- SAME Tones - sent from CSC: VM\_SJ ]----  
start\_time: 04:21:42 end\_time: 04:21:48, type: MKEFFAFLD, transmitter: MKE, SAME\_codes:  
ZCZC-WXR-TOR-055127+0045-0720421-KMKX/NWS-

**(Note that the product type is identified as a MKEFFAFLD - what was actually issued was a TOR. Fortunately, the actual SAME burst carried the correct TOR identification.)**

This level of corruption in a database will generally cause scheduling problems which could result in hung transmitters, feps going off line, or cause CRS to go down.

We will continue look into this, but in the meantime, just wanted to get a heads up out.

If you find either problems in your transmitter logs or question marks in your daily backups, please contact the CRS Support Group at 301-713-0191 at ext:

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